

from the group consisting of magnesium oxide, magnesium hydroxide, mixtures of magnesium oxide and magnesium hydroxide and magnesium hydroxycarbonate, wherein said composition exhibiting a mean particle size of less than 50μ and a particle size slope of less than 5.

12. (Amended) A non-caking solid pulverulent reactive composition for the purification of a gas containing HCl, HF, sulfur oxide, nitrogen oxide, dioxins, furans, and admixtures thereof, consisting essentially of

sodium bicarbonate and

a caking inhibitor for sodium bicarbonate,

said inhibitor is selected from the group consisting of lignite coke, a magnesium compound and admixtures thereof, wherein said magnesium compound is selected from the group consisting of magnesium oxide, magnesium hydroxide, mixtures of magnesium oxide and magnesium hydroxide and magnesium hydroxycarbonate;

wherein said composition is devoid of silica.

Please add the following claim 13

13. The process of Claim 1 wherein the particle size slope is defined by σ , wherein

$$\sigma = \frac{D_{90} - D_{10}}{D_{50}}$$

wherein D_{90} represents the diameter at which 90% of the particles of the reactive composition (expressed by weight) have a diameter of less than D_{90} ;

wherein D_{50} represents the diameter at which 50% of the particles of the reactive composition (expressed by weight) have a diameter of less than D_{50} ; and

wherein D_{10} represents the diameter at which 10% of the particles of the reactive composition (expressed by weight) have a diameter of less than D_{10} .